

SERVICE MANUAL PA31/32

WATSON
FA 3651/3661

Chassis TESI 2 & 4
Mono PAL BG

52060320

galaxis★

EINSCHALTEN UND GUT

SCHEMATIC DIAGRAM

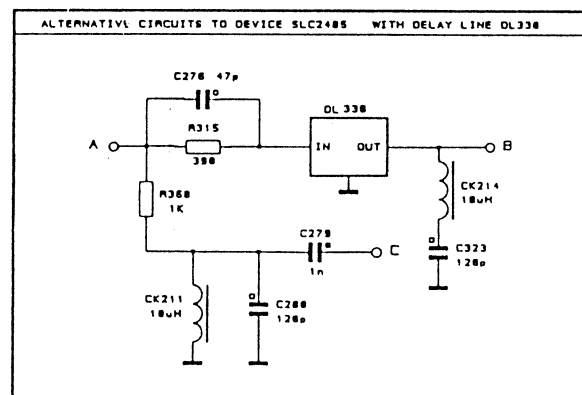
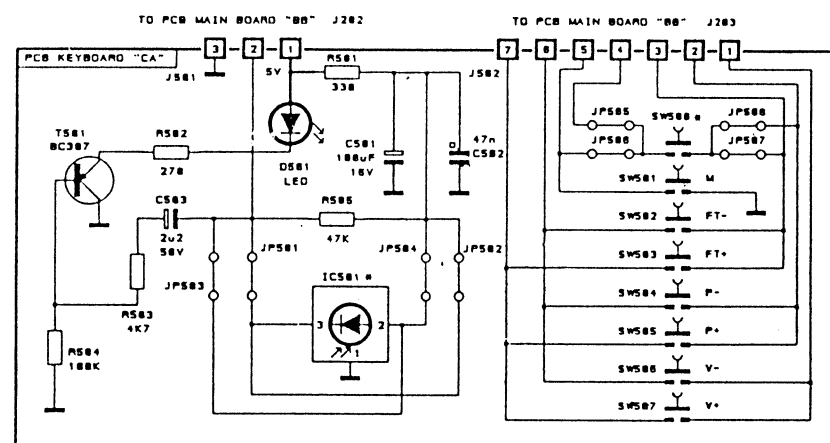
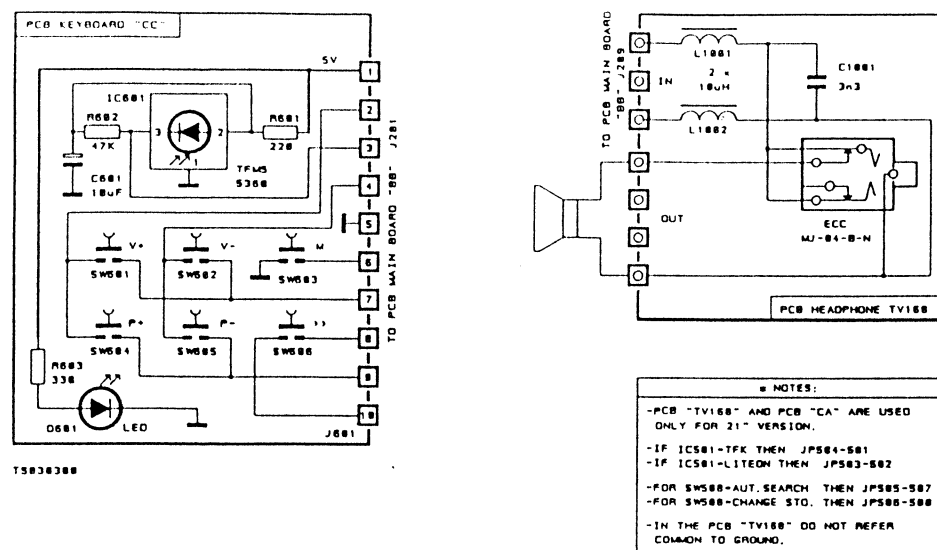
TESI 4 14" 21"

PAL

TECHNICAL DATA

- POWER SUPPLY 220 Vac $\pm 10\%$ 50Hz
- CONSUMPTION 50Wh
- AUDIO OUTPUT IMPEDANCE 16 ohm
- OUTPUT AUDIO POWER 3W (for 14") 4W (for 21")
- INPUT ANTENNA IMPEDANCE 75 ohm COAXIAL
- I.F. SOUND FREQUENCY 33.4 Mhz
- INTERCARRIER SOUND 5.5 Mhz
- I.F. VIDEO CARRIER 38.9 Mhz
- I.F. COLOUR CARRIER 34.47 Mhz
- PICTURE TUBE 90°
- AUTOMATIC DEMAGNETIZATION
- COMPLETELY AUTOMATIC CIRCUIT COLOUR KILLER
- CHROME CIRCUIT WITH CRYSTAL AT STABILITY AT 4.43 Mhz

ULTRAVOX



SM Power Supply

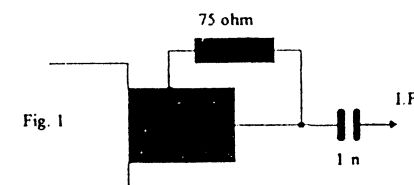
- Connect a digital voltmeter between the secondary mass and the cathode of the diode D212 (BYV95) with the brightness and contrast set at minimum.
- Adjust the Trimmer PT201 at 108V $\pm$ 1V for 14" (113V $\pm$ 1V for 21").

IF Video Calibration

- Apply to the issue I.F. of the Tuner (through a screened cable as in fig.1) a video signal with colour bars at 38,9 Mhz of amplitude 10mV.

LC201 Calibration (Demodulator).

- Connect a voltmeter (minimum 20Kohm/V-10Vfs) to the pin n° 2 of the Tuner (AGC).
- Rotate the Trimmer PT202 counterclockwise to have the maximum reading of the voltmeter.
- Rotate clockwise until the indicator doesn't go down abruptly.
- Rotate the core of the bobbin LC201 for the minimum index indication; if it goes down to the 0 too, rotate PT202 again until you read about 3V and repeat the calibration of PT202 checking also the picture.



LC 203 Calibration (sound carrier trap).

- Connect the probe of the oscilloscope to pin n° 19 of the scart and make minimum the residue of audio on the video at the step before the synchro. Regulate by eye until the residue of audio noise on the video disappears.

LC 202 Calibration (AFC).

- Connect the voltmeter to pin n° 9 of the microprocessor and rotate the core until you reach the continuous voltage of 2,5V.

Identification control.

- Connect the voltmeter to pin n° 34 of the microprocessor. Measure 5V with a syntonized station and 0V out station.

A.G.C. Calibration

- Apply to the antenna a signal of 1mV (60dB) with the best relation between noise and signal. Rotate the Trimmer PT202 counterclockwise.
- Connect a voltmeter (20Kohm/V-10Vfs) and rotate clockwise until the tension indicated by voltmeter doesn't increase from the initial value (about 9V).

Crome Calibration

- Connect a generator of colour bars of 1mV to the antenna with burst of 75% and audio modulation with fixed note of L.F.
- Adjust the C288 Trimmer for the minimum sliding of colour.
- Adjust LC204 -PT203 for the minimum Hannover effect, observing as sample cyan and magenta colours.

R.G.B. Final Calibration

- Connect a signal with video modulation to the antenna (black screen).
- Adjust the brightness to the minimum (eventually reduce G2 if the screen should be enlightened too).
- Adjust R401-R402 (gains) half run with help of a voltmeter of 20CV fond scale.
- Adjust R418 R419 R420 to obtain 160V on the respective cathodes.
- Change the video modulation of the generator of bar signals on the grey scale or on the colour scale eliminating the saturation.
- Bring brightness and saturation to the minimum and contrast to the maximum.
- Regulate G2 until the four brighter bars of the grey scale are visible.
- Decrease the contrast until only the bar on the left side is visible.
- Touch again R418 R419 R420 to obtain the best neutral grey of the visible bar.
- Bring back the analogical levels to the medium value by means of the pulsing button on the remote control.
- Eliminate the colour and touch again R419 R420 for the best white purity of the brighter bar.

Geometry

- Syntonize the picture of reticul with the extreme bars of horizontal and vertical amplitude.
- Shortcircuit to ground the knot R432-R433 and regulate the Trimmer PT205 for the minimum sliding of horizontal frequency.
- Regulate the Trimmer PT206 for the best horizontal centering of the picture (if the last regulation consists to have a sensible displacement of the beginning position, repeat the regulation of horizontal frequency).

Verticle amplitude

- Adjust the Trimmer PT204 for the correct dimension of the vertical picture.

The diagram illustrates the internal circuitry of the Philips 2500 television receiver. It is divided into several functional blocks:

- Power Supply Section:** Features a 230V AC input connected to a 1K R1106 fuse. The power is regulated by a 500V 500mA power transformer (L 100) and a 500V 500mA power transformer (L 100). The output is filtered by a 220µF 25V electrolytic capacitor (C 1115) and a 220µF 25V electrolytic capacitor (C 1115). The power supply is connected to the 12V, 5V, and 0V rails.
- Video Amplifier Section:** The video input (1K VIDEO) is connected to a 1K R1101 resistor and a 100K R1102 resistor. The signal is amplified by a 68K R1103 resistor and a 100K R1104 resistor. The output is connected to the 12V rail.
- Audio Amplifier Section:** The audio input (1K AUDIO) is connected to a 1K R1105 resistor and a 100K R1106 resistor. The signal is amplified by a 68K R1103 resistor and a 100K R1104 resistor. The output is connected to the 12V rail.
- Other Components:** The circuit includes various resistors (R1101, R1102, R1103, R1104, R1105, R1106, R1107, R1108, R1109, R1110, R1111, R1112, R1113, R1114, R1115, R1116, R1117, R1118, R1119, R1120, R1121, R1122, R1123, R1124, R1125, R1126, R1127, R1128, R1129, R1130, R1131, R1132, R1133, R1134, R1135, R1136, R1137, R1138, R1139, R1140, R1141, R1142, R1143, R1144, R1145, R1146, R1147, R1148, R1149, R1150, R1151, R1152, R1153, R1154, R1155, R1156, R1157, R1158, R1159, R1160, R1161, R1162, R1163, R1164, R1165, R1166, R1167, R1168, R1169, R1170, R1171, R1172, R1173, R1174, R1175, R1176, R1177, R1178, R1179, R1180, R1181, R1182, R1183, R1184, R1185, R1186, R1187, R1188, R1189, R1190, R1191, R1192, R1193, R1194, R1195, R1196, R1197, R1198, R1199, R1200, R1201, R1202, R1203, R1204, R1205, R1206, R1207, R1208, R1209, R1210, R1211, R1212, R1213, R1214, R1215, R1216, R1217, R1218, R1219, R1220, R1221, R1222, R1223, R1224, R1225, R1226, R1227, R1228, R1229, R1230, R1231, R1232, R1233, R1234, R1235, R1236, R1237, R1238, R1239, R1240, R1241, R1242, R1243, R1244, R1245, R1246, R1247, R1248, R1249, R1250, R1251, R1252, R1253, R1254, R1255, R1256, R1257, R1258, R1259, R1260, R1261, R1262, R1263, R1264, R1265, R1266, R1267, R1268, R1269, R1270, R1271, R1272, R1273, R1274, R1275, R1276, R1277, R1278, R1279, R1280, R1281, R1282, R1283, R1284, R1285, R1286, R1287, R1288, R1289, R1290, R1291, R1292, R1293, R1294, R1295, R1296, R1297, R1298, R1299, R1300, R1301, R1302, R1303, R1304, R1305, R1306, R1307, R1308, R1309, R1310, R1311, R1312, R1313, R1314, R1315, R1316, R1317, R1318, R1319, R1320, R1321, R1322, R1323, R1324, R1325, R1326, R1327, R1328, R1329, R1330, R1331, R1332, R1333, R1334, R1335, R1336, R1337, R1338, R1339, R1340, R1341, R1342, R1343, R1344, R1345, R1346, R1347, R1348, R1349, R1350, R1351, R1352, R1353, R1354, R1355, R1356, R1357, R1358, R1359, R1360, R1361, R1362, R1363, R1364, R1365, R1366, R1367, R1368, R1369, R1370, R1371, R1372, R1373, R1374, R1375, R1376, R1377, R1378, R1379, R1380, R1381, R1382, R1383, R1384, R1385, R1386, R1387, R1388, R1389, R1390, R1391, R1392, R1393, R1394, R1395, R1396, R1397, R1398, R1399, R1400, R1401, R1402, R1403, R1404, R1405, R1406, R1407, R1408, R1409, R1410, R1411, R1412, R1413, R1414, R1415, R1416, R1417, R1418, R1419, R1420, R1421, R1422, R1423, R1424, R1425, R1426, R1427, R1428, R1429, R1430, R1431, R1432, R1433, R1434, R1435, R1436, R1437, R1438, R1439, R1440, R1441, R1442, R1443, R1444, R1445, R1446, R1447, R1448, R1449, R1450, R1451, R1452, R1453, R1454, R1455, R1456, R1457, R1458, R1459, R1460, R1461, R1462, R1463, R1464, R1465, R1466, R1467, R1468, R1469, R1470, R1471, R1472, R1473, R1474, R1475, R1476, R1477, R1478, R1479, R1480, R1481, R1482, R1483, R1484, R1485, R1486, R1487, R1488, R1489, R1490, R1491, R1492, R1493, R1494, R1495, R1496, R1497, R1498, R1499, R1500, R1501, R1502, R1503, R1504, R1505, R1506, R1507, R1508, R1509, R1510, R1511, R1512, R1513, R1514, R1515, R1516, R1517, R1518, R1519, R1520, R1521, R1522, R1523, R1524, R1525, R1526, R1527, R1528, R1529, R1530, R1531, R1532, R1533, R1534, R1535, R1536, R1537, R1538, R1539, R1540, R1541, R1542, R1543, R1544, R1545, R1546, R1547, R1548, R1549, R1550, R1551, R1552, R1553, R1554, R1555, R1556, R1557, R1558, R1559, R1560, R1561, R1562, R1563, R1564, R1565, R1566, R1567, R1568, R1569, R1570, R1571, R1572, R1573, R1574, R1575, R1576, R1577, R1578, R1579, R1580, R1581, R1582, R1583, R1584, R1585, R1586, R1587, R1588, R1589, R1590, R1591, R1592, R1593, R1594, R1595, R1596, R1597, R1598, R1599, R1600, R1601, R1602, R1603, R1604, R1605, R1606, R1607, R1608, R1609, R1610, R1611, R1612, R1613, R1614, R1615, R1616, R1617, R1618, R1619, R1620, R1621, R1622, R1623, R1624, R1625, R1626, R1627, R1628, R1629, R1630, R1631, R1632, R1633, R1634, R1635, R1636, R1637, R1638, R1639, R1640, R1641, R1642, R1643, R1644, R1645, R1646, R1647, R1648, R1649, R1650, R1651, R1652, R1653, R1654, R1655, R1656, R1657, R1658, R1659, R1660, R1661, R1662, R1663, R1664, R1665, R1666, R1667, R1668, R1669, R1670, R1671, R1672, R1673, R1674, R1675, R1676, R1677, R1678, R1679, R1680, R1681, R1682, R1683, R1684, R1685, R1686, R1687, R1688, R1689, R1690, R1691, R1692, R1693, R1694, R1695, R1696, R1697, R1698, R1699, R1700, R1701, R1702, R1703, R1704, R1705, R1706, R1707, R1708, R1709, R1710, R1711, R1712, R1713, R1

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